

Market Index Proposal for Alternative to NFF

Rationale for Market Index Approach

This proposal describes a methodology that can be effectively used in Illinois to establish the Market Values used in the calculation of transition charges and PPO rates. A market index approach is generally supported by Ameren, Commonwealth Edison, and Illinois Power, who could file alternative tariffs which would then allow replacement of the NFF process for setting market values.

Market indices provide definitive benefits for all market participants versus the NFF process.

- ◆ Market indices are reasonably unbiased representations of prices at which most market participants buy and sell electricity
- ◆ Market indices are transparent, up-to-date projections of market prices
- ◆ Market indices accurately reflect the value utilities can expect to capture from freed up power and energy as anticipated in the 1997 Act
- ◆ Market indices do not obligate individual utilities who may not have capacity to offer generating resources into the market
- ◆ Market values from indices can be consistently translated into equivalent values for all customer classes in a manner consistent with current methodologies
- ◆ Load shaping and load following issues can be addressed by using available hourly price data to provide hourly price profiles

A market index proposal appears to be the best available alternative to the NFF process. Unlike auction proposals, which are currently undeveloped and only conceptual for the Illinois market, forward indices are currently used for trading in Illinois. Since these indices are already established, they can and have been scrutinized to determine if they meet the objectives that have been established by the Market Value (MV) working group for an alternative to the NFF. Details of the market index, auction and other proposals, if applicable, should be thoroughly examined at the next MV working group meeting on March 8th.

Development of an auction process will require extensive discussion over issues such as: the actual product to be offered, the design of the auction, mechanics of bid evaluation, eventual translation issues to all customer classes, and necessary measures to prevent “gaming” the bid prices. Therefore we feel that the market index approach will stand out as the best alternative to meet the criteria and objectives determined by the working group in the ICC’s first MV workshop.

Principles and Structure

Ameren, Commonwealth Edison, and Illinois Power have agreed on basic principles and a structure that would create a viable market index methodology in Illinois. The primary principles are:

1. a desired end state would provide accurate, unbiased, and transparent market values that best reflect the regional market in which the utilities operate
2. as much uniformity as reasonably achievable helps other market participants understand the process and values throughout the state
3. methodology must contain provisions which mitigate manipulation of market prices
4. recognizing that there is no “perfect answer”, a consistent and reasonable approach would better serve Illinois than the NFF process
5. the index methodology will be monitored continually to determine if modifications or enhancements are needed.

The basic structure for the proposed market index methodology is:

1. establish accurate market price forecasts for future on-peak periods that accounts for monthly variability;
2. utilize best available data to determine off-peak prices recognizing their consistency over time;
3. utilize best available hourly pricing information to capture expected price fluctuations during the day and account for weekend price differences;
4. arrive at market values that can be readily applied to specific customer load profiles;
5. appropriately aggregate monthly values to provide desired summer and non-summer values.

Mechanics

On-Peak Pricing

On-peak pricing is the most critical component of a market index methodology. Most of the value obtained in electricity markets come during the on-peak period – especially during the summer. The standard wholesale definition for on-peak is a sixteen hour period, Monday through Friday, except for certain prescribed holidays. This on-peak period is often referred to as a 5X16 period, and is the period incorporated in the most commonly traded product in futures and forward markets. These future and forward quotes are prices that market participants are willing to pay now for electricity to be delivered during some future time.

Previous market index proposals centered on futures contract prices due to their standardized contract and transparency as they were listed on organized exchanges. However, most market participants used and continue to use forward markets which involve bi-lateral transactions or brokerage business, both of which are handled over the

telephone. There has always been questions regarding transparency of prices because most information was dependent on business relationships. Recently, electronic trading exchanges have started up which provide much of the forward market information on an electronic screen. This greatly improves the transparency of market price transactions and available quotes. Moreover, forward markets remain the mechanism most participants used to purchase power in future months or to hedge prices during those months, and therefore are still the best indicators of available future prices.

Another important aspect of forward markets is they standardize delivery into specific trading hubs. Currently, there are multiple active hubs in the Midwest, e.g. Into ComEd, Into CINergy, Into TVA, Into Entergy. Typically, prices in these hubs are very similar. Otherwise, there would be arbitrage opportunities for parties to buy in one and sell in another. However, the trading hubs are geographically distinct and may have prices based on their particular regional situations. Different parts of Illinois may be connected to one or more of these trading hubs with some connections considered stronger than others. The Into ComEd hub is definitely in Illinois, but areas in Southern Illinois may be more directly correlated to other hubs such as the Into CINergy hub.

These multiple connections to hubs raises the question of which forward prices best represent market values in the different regions in Illinois. This issue has to be evaluated more closely. If one wished to develop single state-wide values, a blending of two or more of the various hubs may result in a more reflective value.

After deciding which indices are most appropriate, monthly values must be determined for the future period in question. In order to mitigate potential price manipulation, “snapshots” of quotes would be taken during a month prior to the final price setting date. These “snapshots” will be taken during regular business days and would use the weighted average transaction price for each month under review on that specific day. If there were no transactions recorded during that day, the midpoint of market best bid/offer prices could be substituted. The mid-point of the bid/offer spread is a reasonable representation of where the market valuation of prices would be on that particular day. By averaging “snapshots” of forward prices over many days, it is difficult to artificially distort prices. Since the summer period contains the most critical values, the price setting should be done as close to the summer period as practical. If deemed necessary, additional price setting periods can be established.

Off-Peak Pricing

Off-peak pricing is much less volatile and is not actively traded in forward markets. The historical consistency in off-peak prices lends itself to using recent prices to represent the expected future prices. There are businesses which conduct daily surveys of day-ahead prices for the weekday off-peak periods. These surveys reflect a daily price for the eight-hour period outside the peak period definition. Since these surveys reflect a reasonably accurate market price for that off-peak period, it is the best available information for estimating the expected price for the off-peak period.

These surveys are taken over different regions. A widely recognized survey is reported in “Power Market’s Week *Daily Price Report*” published by McGraw-Hill. There are currently off-peak prices reported for Northern and Southern MAIN, the primary areas Illinois utilities serve customers. Weekday prices for an entire year can be obtained. A simple monthly average can easily be calculated to capture weekday off-peak pricing.

Weekends are not similarly reported, and are generally more volatile periods. Since the volatility can be captured in price shapes, reasonable adjustments can be made to reflect the price levels from the known off-peak prices. It would be important to calculate monthly adjustments to capture seasonal volatility.

Hourly Price Shaping

The prices obtained through the indices described above could provide a single price for a particular period. However, it would be more useful to have prices distributed over the day in the same fashion prices fluctuate on an hourly basis. The Pennsylvania, New Jersey, Maryland (PJM) power pool has been listing hourly market prices on a website. This information is readily available to anyone accessing that website. The PJM-West portion of the power pool has a generation mix that is similar to Illinois with a predominance of nuclear and coal generation. The prices in PJM-West may have different levels than those in Illinois, but the fluctuation of price shapes would be a reasonable proxy. Using this PJM-West data, one can develop a price curve shape to be used in Illinois. This price curve could be used by all utilities in the state for the purposes of calculating transition charges.

There are 8760 hourly values from PJM from 1999, and therefore a similar 8760 hour matrix for Illinois could be established if price levels were adjusted to match the expected prices from the indices. The price adjustment must capture the equivalent value for the periods represented by the index prices and the identical periods of hourly PJM-West prices. By ratioing the value of one megawatt for all hours of the same period between the index value and PJM-West’s value, the proper adjustment factor for price levels can be obtained.

Since only a small time series of data is available, the monthly hourly data could be normalized in the form of a typical weekday with individual 24 hourly prices and a typical holiday/weekend day with its own 24 hourly prices. This normalization of data may more adequately reflect the expected impact on customers from price fluctuations when individual customer loads are used to calculate transition charges. Normalization would be done on an hour-by-hour basis for the same hours over weekdays and the same hours over holiday/weekend days. The result will be to have two 24-hour price profiles for each month of the year. A similar approach could be taken to create a price shape for a typical week within a month.

Translation

After multiplying each hour of the monthly price profiles by the appropriate price adjustment ratio, hourly prices for future typical days is now available. These future hourly prices can now be multiplied by hourly load profiles for individual customer classes to estimate the total value of electricity used by that customer class for a given month. Since the values can remain in an hourly format, specific time periods can be extracted. Monthly data can be aggregated to provide a load weighted average for multi-month periods.

This approach would capture the intra-day translation factors currently in utility tariffs. However, the current translation factors for line losses, administrative fees, and uncollectable accounts would need to be applied.

Timing

Market price index tariffs could be filed in the next thirty to sixty days, leaving the possibility that if the ICC adopted such tariffs, the NFF process currently underway could be eliminated.